

Name _____

Length and Metric Units

P 11-9

Estimate first. Then find each length to the nearest centimeter.

1.  _____

2.  _____

Choose the most appropriate unit to measure each. Write mm, cm, dm, m, or km.

3. width of a house

4. distance across Lake Erie

5. width of a thumbtack

6. thickness of a phone book

Find each missing number.

7. 10 mm = _____ cm

8. 10 cm = _____ dm

9. 1 m = _____ dm

10. **Number Sense** Which would you be more likely to measure in centimeters, a fish tank or a swimming pool?

11. Which is longer, a 12 cm pencil or a 1 dm pen?

12. Find the area of a square with sides 2 cm long.

Test Prep

13. Which is the most appropriate measure for the length of a skateboard?

A. 5 mm

B. 5 cm

C. 5 dm

D. 5 m

14. **Writing in Math** Explain how to give the measurement in centimeters of a 56 mm object.

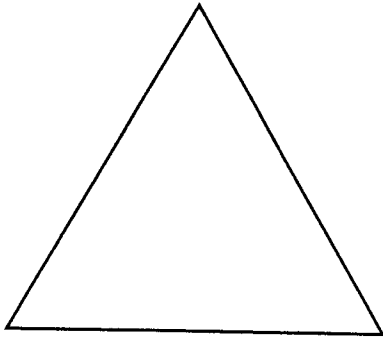
Name _____

Length and Metric Units

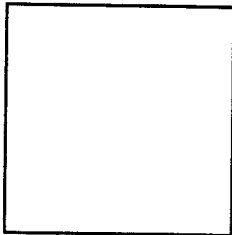
PS 11-9

Use a metric ruler to find the perimeter of each (And area on #'s 2 and 3) figure to the nearest centimeter.

1.

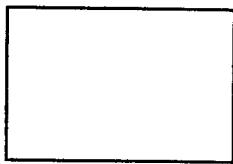


2.



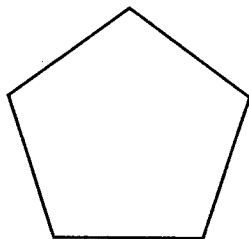
* Find Area →

3.



* Find Area →

4.



5. **Writing in Math** What would be the best metric unit of length to measure the distance between two cities? Explain.

Name _____

Capacity and Metric Units

P 11-10

Choose the most appropriate unit to measure the capacity of each. Write L or mL.

1. water in a bathtub 2. perfume in a bottle 3. soup in a can

4. **Number Sense** Which will be less, the number of liters or the number of milliliters, of the water in a pool? _____

5. Name something you might measure in liters.

6. Name something you might measure in milliliters.

7. A gallon of milk is the same as 3.78 L of milk.
How many liters of milk are there in 2 gal? _____

8. A small can of tomato juice contains 56.8 mL of juice. A large can of tomato juice contains 202.62 mL of juice. How much juice is there in the large and small can combined? _____

Test Prep

9. Which capacity would you be most likely to measure in milliliters?

A. Gas in a car

B. Water in a dam

C. Tea in a cup

D. Detergent in a bottle

10. **Writing in Math** Would you be more likely to measure the amount of water in your kitchen sink in liters or milliliters? Explain.

Name _____

Mass and Metric Units

P 11-11

Choose the most appropriate unit to measure the mass of each.
Write g or kg.

1. Banana _____
2. Tractor _____
3. Coin _____
4. Bowling ball _____
5. Letter _____
6. Encyclopedia _____
7. **Number Sense** Which is a greater number, the mass of a cat in grams or the mass of the same cat in kilograms?

8. The *Dromornis stirtoni* was the largest bird ever. It is now extinct. The ostrich is the largest living bird. What is the difference in mass between the *Dromornis stirtoni* and the ostrich?

Bird	Mass
Ostrich	156 kg
Andean condor	9 kg
Eurasian eagle owl	4.2 kg
<i>Dromornis stirtoni</i>	454 kg

9. Which has a larger mass, an Andean condor or a Eurasian eagle owl?

10. **Reasoning** A decigram is related to a gram in the same way a decimeter is related to a meter. How many decigrams are there in a gram?

Test Prep

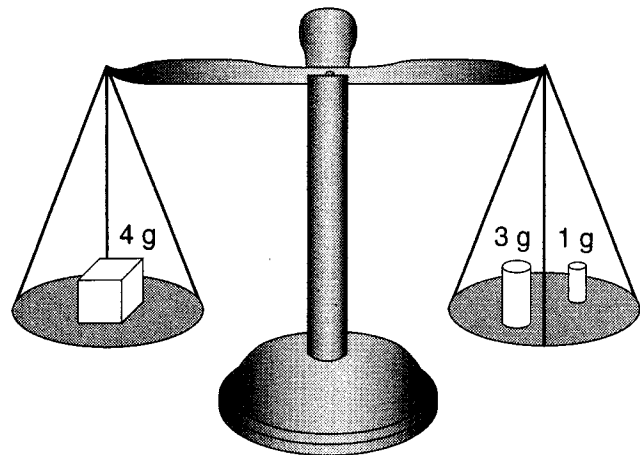
11. Which object would be most likely to have a mass of 2 kg?
- A. A truck B. An orange C. A mosquito D. A math book
12. **Writing in Math** Would you be more likely to find the mass of a pen in grams or in kilograms? Explain.

Name _____

Balance the Scales

E 11-11
MENTAL MATH

Use three metric weights—1 g, 3 g, and 9 g—to balance each scale. The left column in the chart shows the weight of the object that is on the left side of the scale to start with. Fill in the middle and right columns with the amount of weight you would add to both sides to balance the scale. The first one has been done for you.



	Weight of Object on Left Side of Scale	Weights Added to Left Side of Scale	Weights Added to Right Side of Scale
1.	1 g	0	1 g
2.	3 g		
3.	5 g		
4.	8 g		
5.	9 g		
6.	10 g		
7.	12 g		
8.	15 g		

Changing Units and Comparing Measures

P 11-12

Find each missing number.

1. 4,000 mL = _____ L
2. 51 kg = _____ g
3. 7,000 dm = _____ m
4. 600 cm = _____ m

Compare. Write $>$ or $<$ for each \bigcirc .

5. 70 g \bigcirc 7 kg
6. 890 cm \bigcirc 9 dm
7. 6 L \bigcirc 900 mL
8. 98 mm \bigcirc 9 cm 9 mm

	Great Gray Owl	Elf Owl	Great Horned Owl
Length	84 cm	160 mm	63 cm
Wingspan	152 cm	380 mm	152 cm
Mass	1.45 kg	4 g	1,800 g

9. Write the owls in order from the least to the greatest mass.

10. How many centimeters long is the elf owl? _____

Test Prep

11. How many milliliters are there in 32 L?

A. 32,000 B. 3,200 C. 320 D. 32

12. **Writing in Math** The bird with the longest beak is the Australian pelican. The pelican's beak is up to 47 cm long. Explain how to find the number of millimeters long the beak is.

Name : _____

Score : _____

Metric Unit Conversion - Length

Convert between centimeters (cm) and millimeters (mm).

1) 85.9 cm = _____ mm	2) 326.8 mm = _____ cm
3) 177.1 mm = _____ cm	4) 29.5 cm = _____ mm
5) 99 cm = _____ mm	6) 451.47 mm = _____ cm

Convert between meters (m) and centimeters (cm).

7) 6720 cm = _____ m	8) 9290 cm = _____ m
9) 10.11 m = _____ cm	10) 76.71 m = _____ cm
11) 68 m = _____ cm	12) 573.6 cm = _____ m

Convert between kilometers (km) and meters (m).

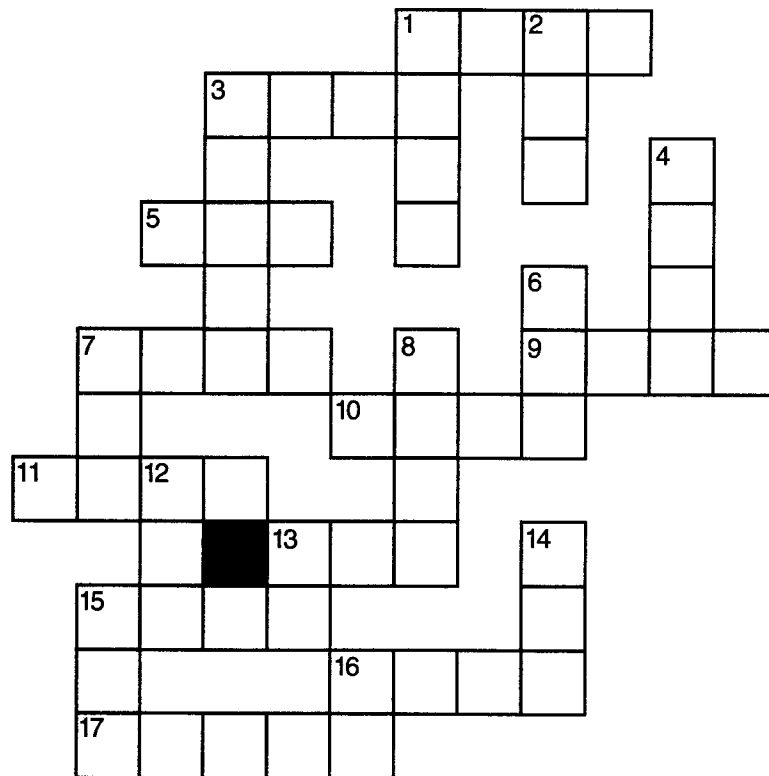
13) 19.246 km = _____ m	14) 47330 m = _____ km
15) 61160 m = _____ km	16) 51.2 km = _____ m
17) 21 km = _____ m	18) 7800 m = _____ km

Name _____

Crossmath Puzzle

E 11-12
NUMBER SENSE

Fill in each square of the crossword puzzle using metric unit numbers.



ACROSS

1. 6 L 140 mL = ____ mL
3. 3 m 4 cm = ____ mm
5. 5 m = ____ cm
7. 7 kg = ____ g
9. 1 km 400 m = ____ m
10. 4 kg 20 g = ____ g
11. 9 L 30 mL = ____ mL
13. 8 m 6 dm = ____ cm
15. 70 m 40 cm = ____ cm
16. 625 cm = ____ mm
17. 13 L = ____ mL

DOWN

1. ____ g = 6 kg
2. 4,000 dm 200 cm = ____ m
3. 30 kg = ____ g
4. ____ m = 2 km 20 m
6. 8,100 mm = ____ cm
7. 7 m 1 dm = ____ cm
8. ____ mL = 2 L
12. 3 m = ____ cm
13. 80,000 g = ____ kg
14. 3,100 cm = ____ dm
15. ____ cm = 7 m 1 cm
16. 60,000 mL = ____ L

Measurement Problems (metric + customary)**Capacity**

Jenna added 1 gallon of fresh water to her fish tank. She then noticed that she didn't add enough water, so she added 1 quart of water. How many total quarts of water did she add to the fish tank?

Length

Jonah is 1 meter, 55 centimeters tall. How many centimeters tall is Jonah?

Weight

George, an elephant at the zoo, weighs 2 tons. Jenny, another elephant at the zoo, weighs 3,500 pounds. Which elephant weighs more?

Time

It is 4 weeks and 2 days until Paulo's birthday. It is 35 days until Oscar's birthday. Who has to wait longer until his birthday?

Money

Clara has 3 quarters, 5 dimes, 2 nickels, and 12 pennies.
How much money does Clara have?

Temperature

The temperature outside when Lauren arrived at school was 71°F . By recess, the temperature had increased 12° . What was the temperature at recess?

Name: _____

Measurement Problems *(metric + customary)***Directions:** Use a measurement chart to solve the problems.

- | | |
|---|--|
| 1. 5 quarts = _____ pints | 8. 4,000 meters = _____ kilometers |
| 2. 6 weeks = _____ days | 9. 36 inches = _____ feet |
| 3. 4 tons = _____ pounds | 10. 16 quarts = _____ gallons |
| 4. 6 yards = _____ feet | 11. 1,000 centimeters = _____ meters |
| 5. 4 liters = _____ milliliters | 12. 48 months = _____ years |
| 6. 3 pounds = _____ ounces? | 13. 2,000 milliliters = _____ liters |
| 7. Carlo's backpack weighs 8 kilograms. How many grams does his backpack weigh? | 14. A tree's branch is 84 inches tall. How many feet tall is the branch? |

Name: _____

Measurement Problems

Directions: Read each problem. Circle the letter of the best answer.

1. A movie began at 2:15p.m. and ended at 4:55 p.m. How long was the movie?

A. 40 minutes
B. 2 hours, 40 minutes
C. 3 hours, 40 minutes
D. 6 hours, 70 minutes
2. Pablo is 4 feet, 3 inches tall. Peter is 55 inches tall. How many inches taller is the taller boy than the shorter boy?

A. 4 inches
B. 7 inches
C. 51 inches
D. 52 inches
3. A vase holds 3 quarts of water. How many pints does it hold?

A. 5 pints
B. 6 pints
C. 7 pints
D. 8 pints
4. Jillian had 5 dimes, 1 quarter, 3 nickels, and 1 penny. How much money did Jillian have?

A. \$0.10
B. \$0.71
C. \$0.91
D. \$1.06
5. The Gomez family is going on vacation for 10 days. The Harper family is going on vacation for 2 weeks and 1 day. The Roger family is going on vacation for 1 week and 4 days. Which family is taking the longest vacation?

A. Gomez family
B. Harper family
C. Roger family

6. Mrs. Potter made 3 different drinks for a party. She made 3 quarts of lemonade, 1 gallon of iced tea, and 8 pints of peach punch. Mrs. Potter made the same amount of which two drinks?
- A. Lemonade and iced tea
B. Iced tea and peach punch
C. Peach punch and lemonade
7. Mr. Jones bought a bag of apples that weighed 3 kilograms and 20 grams. He bought a bag of potatoes that weighed 2,500 grams. How many more grams did the apples weigh than the potatoes?
- A. 500
B. 520
C. 1,520
D. 2,480
8. A car weighs 2 tons and 410 pounds. How many pounds does the car weigh?
- A. 410
B. 2,410
C. 4,000
D. 4,410
9. The high temperature on Wednesday was 50°F . The low temperature on Wednesday was 29°F . What was the difference between the high and low temperature on Wednesday?
- A. 21°F
B. 31°F
C. 39°F
D. 79°F
10. Kara bought a soda at the store for \$1.79. She gave the store clerk \$5.00. How much change did she receive?
- A. \$3.21
B. \$3.31
C. \$4.31
D. \$4.79
11. Teresa drinks 3 cups of milk per day. Anaya drinks 1 pint of milk per day. How many more cups of milk does Teresa drink than Anaya in one week?
- A. 2
B. 7 cups
C. 14 cups
D. 21 cups

Name: _____

Units of Measurement

Directions: Read each question. Circle the letter of the best answer.

- | | |
|--|--|
| 1. What is the most reasonable measurement of the length of a chapter book? | 4. What is the most reasonable measurement of the weight of a small puppy? |
| A. 8 millimeters | A. 6 pounds |
| B. 8 inches | B. 6 ounces |
| C. 8 feet | C. 6 tons |
| D. 8 meters | D. 6 grams |
| 2. What is the most reasonable measurement of the capacity of a large fish tank? | 5. What is the most reasonable measurement of the height of a flagpole? |
| A. 20 milliliters | A. 15 centimeters |
| B. 20 cups | B. 15 inches |
| C. 20 pints | C. 15 yards |
| D. 20 gallons | D. 15 miles |
| 3. What is the most reasonable measurement of the capacity of a drinking glass? | 6. What is the most reasonable measurement of the weight of a pencil? |
| A. 1 millimeter | A. 10 grams |
| B. 1 cup | B. 10 kilograms |
| C. 1 quart | C. 10 pounds |
| D. 1 gallon | D. 10 tons |

7. What is the most reasonable measurement of the capacity of a baby's bottle?
- A. 150 milliliters
 - B. 150 cups
 - C. 150 pints
 - D. 150 liters
8. What is the most reasonable measurement of the length of a child's hand?
- A. 10 millimeters
 - B. 10 centimeters
 - C. 10 feet
 - D. 10 yards
9. What is the most reasonable measurement of the height of a doorway?
- A. 9 inches
 - B. 9 feet
 - C. 9 yards
 - D. 9 meters
10. What is the most reasonable measurement of the weight of a newborn baby?
- A. 6 ounces
 - B. 6 pounds
 - C. 6 grams
 - D. 6 tons
11. What is the most reasonable measurement of the length of a grasshopper?
- A. 2 inches
 - B. 2 feet
 - C. 2 yards
 - D. 2 miles
12. What is the most reasonable measurement of the capacity of a medicine dropper?
- A. 3 milliliters
 - B. 3 liters
 - C. 3 pints
 - D. 3 quarts